



# FUTURE U.

## Video Topic Series: Flight Path

FUTURE U offers interactive and real-life learning experiences to help students in grades 6–12 embrace their potential and inspire them to make an impact through problem solving, and innovate for the future.

### About the Video Series

Throughout *Flight Path*, a five-part video Topic Series, students will explore first-hand the innovation and continuous improvement that occurs at Boeing. They will be introduced to a wide range of important and complex processes, and they will meet some of the diverse Boeing employees who collaborate to develop state-of-the-art aircraft. Each episode in the series highlights a specific phase of the Boeing aviation process: design and conception, fabrication and manufacturing, testing and analysis, manufacturing and delivery, and support in daily service. The series is tied together with themes of innovation and improvement, and it leads students through the continuous cycle of problem solving as they pursue questions such as: What are we trying to solve? How are we going to make this?

How do we know this is the right design?

### Classroom Use

Each video in this five-part Topic Series is accompanied by a classroom activity. The activities, which are 45–60 minutes in length, are designed to bring students into the innovation process as they work in tandem with the videos to develop their own aerospace innovation.

Each activity is presented in three sections: Engage, Investigate & View, and Apply.

- During the Engage section, students will be guided through an opening activity that introduces them to the video's main concepts.
- They will then explore these concepts more fully with help from the video during the Investigate & View section.
- The Apply section ultimately challenges students to apply their learnings to their own aviation innovation process as they participate in a hands-on collaborative activity.

Each video and accompanying activity build on the content that was covered and the work that was completed in the previous activity(s).

## Video & Activity Overviews

### Video & Activity 1: Concept—What are we trying to solve?

After learning about the complex nature of Boeing's engineering design process during the first video, students will be challenged to design an airplane with minimal drag. To kick off the engineering design process, they will research the concept of drag in order to understand its effect on flight. They will then collaborate as they create innovative 2D airplane designs.

### Video & Activity 2: Fabrication and Manufacturing—How are we going to make this?

The second video helps students gain insight into Boeing's infrastructure and production cycle. As they watch, students consider the key elements of manufacturing. They will then simulate the manufacturing process as they create 3D prototypes of their 2D airplane designs.

### Video & Activity 3: Testing & Analysis—What's working? What needs to change?

After learning about Boeing's phases of testing and analysis during the third video, students will apply testing protocols to their own plane designs. They will then analyze the results of their testing in order to optimize their planes to ensure minimal drag.

### Video & Activity 4: Manufacturing and delivery—What does it take to build and deliver aircraft?

The fourth video explains the vast scale, complexity, and challenges of the manufacturing process. The accompanying activity will probe students to consider the many working parts that must come together to make aircraft development a success. Students will synthesize their learnings in order to create a podcast that explains how their low-drag plane moved through this process.

### Video & Activity 5: Services and Topic Series Wrap up—Maintaining the fleet for continuous improvement

The final video gives students a first-hand look at the operations, maintenance, and services that follow Boeing planes over the course of their "lives." The segment also highlights several careers as it exposes students to the scope of in-demand aviation career opportunities. Student will wrap up their experience by investigating some of the career opportunities to be found in the aviation sector. They will ultimately select one role that interests them, and they will consider how a person in this role could have contributed to the development of their low-drag plane.